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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/879,248	06/12/2001	Hao Fan	21829/81 (EBC-006)	4829

7590

09/23/2003

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EXAMINER

DESAI, ANAND U

ART UNIT

PAPER NUMBER

1653

DATE MAILED: 09/23/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

09/879,248

Applicant(s)

FAN ET AL.

Examiner

Anand U Desai

Art Unit

1653

-- Th MAILING DATE of this communication appears on the cov r she t with the correspond nce address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-94 is/are pending in the application.
- 4a) Of the above claim(s) 2-92 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 93, and 94 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

This office action is in response to Paper # 11, filed June 25, 2003. Claims 2-92 have been canceled. Claims 1, 93, and 94 are currently pending and are under examination.

Withdrawal of Rejections

The rejection of Claim 1 under 35 U.S.C. 112, second paragraph, is withdrawn.

Maintenance of Rejections

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1, 93, and 94 are rejected under 35 U.S.C. 102(b) as being anticipated by Cornell Research Foundation (WO 98/54214). As the applicant states in the application, *Erwinia amylovora*'s hypersensitive response elicitor has a first domain spanning from amino acids number 32-74, with an acidic region from a.a. 32-57, and an alpha-helix from a.a. 57-74, a second domain from a.a. 130-180, with an acidic region from a.a. 130-157 and an alpha helix from a.a. 157-180 (page 11, line 30-33 and page 12, lines 1-10). Cornell teaches an isolated hypersensitive response elicitor protein from *Erwinia amylovora* (page 19, lines 25-28) wherein the protein elicits a hypersensitive response in plants (page 6, lines 30-33), and wherein the protein is comprised of the amino acids 1 through 98, or 1 through 218 of the amino acid sequence for the hypersensitive response elicitor protein derived from *Erwinia amylovora* (claim 13; see also Ex. 2). Thus the

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isolated, recombinant protein taught by Cornell is comprised of an isolated pair of spaced apart domains, each comprising an acidic portion linked to an alpha-helix and capable of eliciting a hypersensitive response in plants. Therefore claims 1, 93, and 94 are anticipated by Cornell.

Applicant amendment states "the present invention is directed to the discovery that hypersensitive response eliciting domains include two subunits (Wei declaration paragraph 5). The first subunit, the acidic portion, has at least 10 amino acids and a pI below 5. This acidic portion has a secondary structure in the form a beta-sheet, a beta-turn, or an unordered form. The second subunit also has at least 10 amino acids and a secondary structure in the form of a stable alpha-helix. Neither the acid portion nor the alpha-helix subunit is independently sufficient to elicit the hypersensitive response in plants. Both subunits must be present for a hypersensitive response eliciting domain to elicit the hypersensitive response in plants.

HrpN, from *Erwinia amylovora*, is a hypersensitive response elicitor protein of 403 amino acids in length (Wei declaration paragraph 6). Two hypersensitive response eliciting domains were identified with the native HrpN protein. The hypersensitive response eliciting domains span from amino acid 32 through 74 and from amino acid 157 through 180.

A protein comprising amino acid sequence 1 through 218 of the amino acid sequence from the hypersensitive response elicitor HrpN from *Erwinia amylovora* would simply represent a fragment of the native full-length HrpN protein (Wei declaration 7). The HrpN fragment would comprise the two identified hypersensitive response eliciting domains (amino acid sequence 32-74, "first domain" and amino acid sequence 157-180,

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“second domain”), as well as native flanking amino acid sequence 1 through 31, immediately preceding the first domain, amino acid sequence 75 through 156, immediately following the first domain and immediately preceding the second domain, and amino acid sequence 181 through 218, immediately following the second domain.

The hypersensitive response eliciting domains present in the protein comprising amino acid sequence 1 through 218 of the amino acid sequence from the hypersensitive response elicitor HrpN, are in a native form (Wei declaration 8). The domains are present amongst the native flanking amino acid sequences, in their native orientation, such that would be found in the naturally occurring HrpN elicitor protein from *Erwinia amylovora*.”

Amended claim 1 is a protein which elicits a hypersensitive response in plants, said protein comprising one or more hypersensitive response eliciting domains, wherein each domain is comprised of an acid portion linked to an alpha-helix, said acidic portion having at least 10 amino acids and a pI below 5, said one or more domains being isolated from all other regions of a native hypersensitive response elicitor protein from which the domains originated. The protein taught by Cornell is a protein which elicits a hypersensitive response in plants, that contains one or more hypersensitive response eliciting domains. The domains have an acid portion linked to an alpha-helix, and the acidic portion is at least 10 amino acids and a pI below 5. Comprised is understood to encompass more than just elements recited, therefore a hypersensitive response eliciting domain comprised of an acid portion linked to an alpha-helix structured polypeptide encompasses any acidic portion of a polypeptide that is linked with an alpha-helical polypeptide, such as fragments 1 to 98 or 1 to 218 of HrpN from *Erwinia amylovora*.

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Amino acid fragments 1 to 98 and 1 to 218 are encompassed by claim 1. Furthermore, the fragments from 1 to 98 or 1 to 218 are isolated from the original 1 to 403 native protein from which the domains originated. Amended claim 93 is a protein according to claim 1, wherein the protein comprises one hypersensitive response eliciting domain. Amended claim 94 is a protein according to claim 1, wherein the protein comprises two or more hypersensitive response eliciting domains. Cornell teaches an isolated hypersensitive response elicitor protein from *Erwinia amylovora* (page 19, lines 25-28) wherein the protein elicits a hypersensitive response in plants (page 6, lines 30-33), and wherein the protein is comprised of either the amino acids 1 through 98, which comprises one hypersensitive responsive eliciting domain (**claim 93**) or 1 through 218, which comprises two hypersensitive responsive eliciting domains (**claim 94**) of the amino acid sequence for the hypersensitive response elicitor protein derived from *Erwinia amylovora* (claim 13; see also Ex. 2). Thus the isolated, protein taught by Cornell is comprised of an isolated pair of spaced apart domains, each comprising an acidic portion linked to an alpha-helix and capable of eliciting a hypersensitive response in plants. Therefore claims 1, 93, and 94 are anticipated by Cornell.

No claims are allowable.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. **THIS ACTION IS MADE FINAL.** See MPEP 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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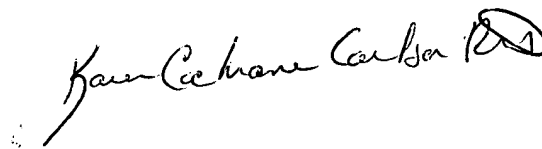
TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anand U Desai whose telephone number is (703) 305-4443. The examiner can normally be reached on Monday - Friday 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Low can be reached on (703) 308-2923. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0198.

September 17, 2003



KAREN COCHRANE CARLSON, PH.D
PRIMARY EXAMINER